

**BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION**

**IN THE MATTER OF THE INVESTIGATION )  
OF TIME-OF-USE PRICING FOR IDAHO ) CASE NO. IPC-E-02-12  
POWER RESIDENTIAL CUSTOMERS. )  
 ) ORDER NO. 29196  
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In Case Nos. IPC-E-02-2 and -3, the Commission directed Idaho Power and the Energy Efficiency Advisory Group (EEAG) to “evaluate and report to the Commission on the viability of a Time-of-Use residential metering program by September 12, 2002.” Order No. 29026 at 22. Time-of-Use (TOU) rates refer to the pricing of electricity based on the estimated cost of electricity during a particular period of the day or “time block.”<sup>1</sup> Time-of-use rates are usually divided into three or four time blocks per 24-hour period (on-peak, mid-peak, off-peak and sometimes super off-peak) and by seasons of the year (summer and winter). In compliance with this Order, Idaho Power submitted its “Report on Residential Time-of-Use Pricing” (Report) on September 12, 2002. In December 2002, interested parties filed comments to which Idaho Power replied on January 17, 2003. In this Order, the Commission directs Idaho Power to submit a plan no later than March 20, 2003 to replace the current residential meters with advanced meters.

**IDAHO POWER’S REPORT ON TIME-OF-USE PRICING**

Idaho Power’s Report, based in part on the economic consulting services of Christensen Associates, concluded that some new types of time-of-use pricing may have potential as viable residential pricing options at some point in the future. However, the Report concludes that residential time-of-use pricing will not be economically viable until an automated meter reading (AMR) system is acquired and a power cost adjustment (PCA) methodology is devised to remove the negative impact on Idaho Power’s earnings. Report at 35. The contents of the Report are discussed in greater detail below.

**“Conventional” TOU pricing:** Traditional time-of-use (TOU) pricing has typically been characterized by two or three fixed price levels (e.g., peak, shoulder, and off-peak) for two

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<sup>1</sup> This definition of “Time-of-Use rates” is taken from the National Association of Regulatory Utility Commissioners (NARUC) glossary of utility terms, which is posted on its website at <http://www.naruc.org/resources/glossary.shtml>.

seasons (e.g., summer and winter). *Id.* at 5. If applied on a mandatory basis to residential customers, conventional TOU pricing would produce “very modest potential benefits” due in part to the relatively small differential between average peak and off-peak wholesale costs. *Id.* at 23. Although making TOU pricing voluntary would produce “somewhat higher consumer benefits,” this would also result in “net revenue losses to Idaho Power due to customers self-selecting the TOU rate whenever it offers immediate bill (and revenue) reductions.” *Id.*

**“Critical Peak” TOU pricing:** This type of pricing would allow the Commission to increase peak-period prices in response to high-cost conditions in the wholesale market. *Id.* at 9. As compared to conventional TOU pricing, this type of pricing would produce much larger demand reductions and “substantial” customer benefits during the most important high-cost hours. *Id.* at 14; 23. If made mandatory, critical peak TOU pricing could result in an annual customer benefit of more than \$1 million. *Id.* According to the Report, Idaho Power would have the potential to avoid \$12 million per year in carrying charges for capital investments in peaking facilities. *Id.* at 22. If offered on a voluntary basis, the Report stated “careful rate design would be required to limit the extent of revenue losses from customer self-selection.” *Id.* Under the assumptions used in Christensen Associates’ analysis, approximately 40 MW of load reductions would occur if 25% of all residential customers participated in critical peak TOU pricing during critical price conditions. *Id.* at 23-24. Using the Report’s base cost scenario, the Company would lose more revenue than it would save by not producing or purchasing the 40 MW (i.e., a net revenue reduction). *Id.* at 23. However, cost reductions under the high power-cost scenario would exceed the revenue reductions and produce net gains to the utility. *Id.*

**Metering Capabilities:** A time-of-use meter would allow the Company to retrieve consumption data for the time-of-use periods during its regular monthly meter-reading process. According to the Report, the average cost to install a standard time-of-use meter for a residential customer would be about \$145 per customer, or approximately \$47 million for all residential customers. *Id.* at 32.

An alternative to the standard TOU meter is the automated meter reading (AMR)-capable TOU meter, which can be read remotely via the power line or radio frequency and collect meter data at will. As compared to the meters currently used by residential customers, the incremental cost of the TOU meter would result in an increased customer charge of about \$1 a

month. *Id.* According to the Report, the latest cost estimate to install an AMR system across Idaho Power's service territory is approximately \$72 million. *Id.*

**PCA Implications:** The Report advocated flowing any power supply-related benefits from time-of-use pricing through the PCA mechanism in a manner that is fair and equitable to customers and the Company. In order for time-of-use pricing to have the opportunity to be viable, the Company believes that the Commission must change the PCA treatment of these benefits to remove the negative impact to Idaho Power's earnings. *Id.* at 33.

**Energy Efficiency Advisory Group:** The Report stated the EEAG believed it would be "more sensible to pursue a demand response program than a time-of-use program at this time given the investment in metering equipment that would be necessary to accommodate a wide-scale time-of-use program." *Id.* at 34. The EEAG did not support mandatory time-of-use pricing for new subdivisions and housing developments, nor did the EEAG support cost shifting of additional meter-related costs to non-participants. *Id.* If time-of-use pricing was implemented, the EEAG preferred to increase the charges for the standard tariff service and make both standard service and time-of-use service optional rather than make time-of-use service mandatory. *Id.*

## COMMENTS

In its September 27, 2003 Notice, the Commission solicited comments on Idaho Power's Time-of-Use Report. The Commission received filings from individuals, interested organizations, Commission Staff and reply comments from Idaho Power. These comments are briefly summarized as follows:

### 1. **Public Comments**

The Commission received four comments from private citizens in this case. A Kuna resident concluded that the opportunity for concerned customers to help themselves via TOU pricing should not be withheld just because the utility does not see any financial benefit. A Boise commentator was disappointed in the Company's position because "these meters would give the consumer a pro-active chance to manage their consumption in collaboration with Idaho Power to lower consumption during peak, high cost use times."

Another Boise resident supported voluntary TOU metering in conjunction with "substantial" conservation programs, like those promoting efficient appliances and construction, to minimize the peak power Idaho Power must purchase. This commentator also noted that any

revenue loss would be offset by “lower power and capital costs and higher company image.” Finally, an Idaho City resident noted that the time-of-use pricing matter is in “the wrong place at the wrong time” for Idaho Power customers, many of whom would lose no matter how rates were structured because they cannot shift power usage to other times.

## **2. Advanced Energy Strategies Comments**

Jeffrey C. Brooks of Advanced Energy Strategies, Inc. (AES) filed comments that generally supported the comments of the NW Energy Coalition. AES argued that time-of-use rates are best suited to medium and large commercial and industrial customers since the residential customers are unlikely to enjoy the economies of scale necessary to outweigh personal convenience. AES Comments at 1. AES first recommended that the Commission order Idaho Power to begin formulating time-of-use rate designs for application to commercial and industrial customer size groups, exempting small commercial and residential customers. *Id.* at 3. Second, AES recommended that Idaho Power formulate TOU demand and energy rates in a revenue neutral fashion to provide appropriate customer price signals. *Id.* Third, AES recommended that the Commission order Idaho Power to integrate TOU and other rate design options into an overall Demand Side Management strategy for inclusion in its Integrated Resource Plan and the next general rate case proceeding. *Id.* at 4.

## **3. NWECA and LAW Comments**

The Northwest Energy Coalition (NWECA) and the Land and Water (LAW) Fund have several concerns about TOU programs. First, NWECA believes that TOU programs are not a substitute for energy efficiency programs and may divert utility, consumer, and regulator attention away from cost-effective efficiency programs that produce durable economic and environmental benefits. NWECA and LAW Comments at 2. They argued that efficiency provides double benefits – both peak load reduction and energy savings, while TOU programs typically reduce only peak load. *Id.* at 4.

Their second concern was about the cost-effectiveness of TOU programs. They pointed out that the Puget Sound Energy (PSE) pilot TOU program data suggested that the cost of the TOU program is approximately 10 times the economic benefit. The first of the required quarterly reports released in October 2002 showed that 94% of customers were not able to save enough with TOU to offset the \$1.00 incremental meter reading charge. *Id.* at 2. Based on these results, the Washington Utilities and Transportation Commission approved PSE’s request in mid-

November to end the pilot-program nine months prior to the original pilot completion date. NWECC noted that the cost threshold would be higher for Idaho Power since the cost of the AMR system was not included in the assessment of PSE incremental costs.

NWECC and the LAW Fund are also concerned that TOU pricing and associated load shifting may have adverse environmental impacts. Moreover, the economic value of load shifting on a hydro-based grid is very modest. During the few hours per year when the differential gets much larger, creative pricing may help to contain market price spikes and should be examined. Furthermore, they stated that a strategy to reduce loads on Idaho Power's hydro-based grid during droughts would seem to be more important than TOU pricing. *Id.* at 3.

Although the NWECC and the LAW Fund recognized that they have largely favored exploration of TOU strategies in recent proceedings, they recommended the Commission defer any further consideration of TOU pricing for Idaho Power's residential customers until the economic and environmental impacts are better understood. *Id.* at 4. They hesitate to support such programs, even for industrial and large customers, until more information is available on the environmental consequences of load shifting. However, they encouraged the Commission and Idaho Power to explore a critical peak pricing strategy as one response tool for drought and high energy cost periods. *Id.*

#### **4. DRAM Comments**

The Demand Response and Advanced Metering Coalition (DRAM)<sup>2</sup> indicated that the proceeding to date has been a good start in identifying the cost and benefits of dynamic pricing. However, DRAM argued the costs of advanced metering may have been overestimated and that some of the benefits from deployment of advanced metering may not have been accounted for. Dram Comments at 12.

After discussing metering choices and objectives, DRAM focused on the cost of meter installation. Although Idaho Power quoted the average meter cost per customer for a standard time-of-use meter to be \$145, DRAM submitted that an average cost of \$100 is more appropriate for an advanced meter capable of allowing TOU pricing. *Id.* at 7. Based on a cost estimate of \$100 per customer, the total cost for providing advanced metering to all 300,000 of

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<sup>2</sup> DRAM is a policy organization comprised of utilities, public interest groups, metering and communications companies and demand response providers. DRAM members participating in these comments include: eMeter, SchlumbergerSema, Landis + Gyr, MeterSmart, DCSI/TWACS, Echelon, Puget Sound Energy and the Alliance to Save Energy. More information on DRAM can be found at [www.dramcoalition.org](http://www.dramcoalition.org).

Idaho Power's residential customers would be approximately \$30 million. *Id.* at 9. While this estimate could conceivably rise due to special circumstances present in Idaho Power's service territory, DRAM found that the estimate of \$72 million for an AMR system as presented in the Report was substantially too high based on commercially available technologies. *Id.*

DRAM also listed advanced metering benefits that were not addressed in the Report. These benefits that warrant further examination included: outage management and response (i.e., trip avoidance, crew optimization), more timely and efficient response to customers, reduced meter reading costs (i.e., reduced labor costs, avoided vehicle and equipment costs), improved meter reading accuracy, and a reduction in estimated bills. The Company would also acquire two-way communications ability and interactive messaging ability, load control and management capabilities, the acquisition of new and different data, and improved forecasting. Advanced meters would also optimize the planning, expansion and operation of the distribution system. Individual customers would benefit from enhanced usage information (resulting in enhanced ability to practice energy management) and additional rate options (customer choice of different product from same provider). DRAM stated that the system would benefit from faster wholesale power cost settlements, improved data, improved forecasting, system optimization, and system planning and expansion. *Id.* at 10-12.

##### **5. Staff Comments**

In contrast to the Company's Report and the Comments of NWECA and the LAW Fund, Staff found that residential time-of-use pricing was economically viable. In support of its position, Staff noted Christensen Associates' analysis that mandatory, critical peak time-of-use retail pricing provided the potential for benefits exceeding \$1 million annually and the potential for another \$12 million annual benefit by avoiding the capital costs associated with 200 megawatts of new peaking facilities. Staff Comments at 2. Staff believes that this is an option that should not be easily dismissed or unnecessarily delayed given the future capacity deficit forecasted by Idaho Power. *Id.* Staff did not believe that the EEAG, as a whole, would agree with Idaho Power's assessment of the Group's conclusions. *Id.* Staff has participated in all of the EEAG meetings and agreed that these issues were discussed. However, Staff stated that no vote was taken on these issues and no conclusions were reached on the TOU issue. *Id.*

Although Puget Sound Energy (PSE) recently sought early termination of its voluntary TOU pricing program, Staff believes this should have little impact on the Idaho

Commission's consideration of either an AMR system or critical peak TOU pricing for Idaho Power. *Id.* at 6. Staff did not believe that PSE's pilot program was comparable since PSE serves more urban customers in a more temperate climate, does not experience extreme summer peak demand, and its tariff was optional rather than mandatory. *Id.* According to Staff, the most effective TOU rates (i.e., critical-peak TOU) can be implemented only if an AMR system is in place. *Id.* at 4.

Even without consideration of TOU pricing, the Company's own AMR Report indicated that an AMR system has a positive net present value of \$32 million over the life of the equipment as compared to the current metering system. *Id.* at 2. Idaho Power tested an AMR system in the Idaho City area in 1999 and concluded that the AMR system was deployable and met the Company's technology requirements. *Id.* at 3. Although Idaho Power estimated the initial cost of an AMR system to be \$72 million, or about 50% more than that required for traditional TOU meters, the entire cost of the AMR system is more than offset by savings in meter reading costs and improved customer service. *Id.* at 4. More specifically, Idaho Power estimated the annualized cost of an AMR system to be about \$4 million, but that AMR would save nearly \$6 million per year in monthly meter reading and customer movement costs. *Id.* at 5. Staff also noted that implementing an AMR system would result in many customer service, cost savings, and revenue enhancement opportunities. These benefits would include additional revenue and less rebilling due to more accurate meter reading, improved outage monitoring and theft detection, remote connect and disconnects, flexible billing schedules, account aggregating, increased employee safety, and flexible rate designs. *Id.* at 2.

With this in mind, Staff believes that consideration of TOU pricing should first focus on planning and installing an AMR system. *Id.* at 4. After Idaho Power has begun AMR installations, the Commission could then consider whether TOU pricing, either mandatory or optional, is an appropriate rate design. Staff believes that determination of TOU rates would be best considered during Idaho Power's next general rate case. *Id.* Once some of the new meters are installed, the Commission and Idaho Power would be able to test alternative TOU rate designs to more precisely estimate Idaho customers' price elasticity of demand. Finally, Staff recommended that Idaho Power submit a plan to the Commission in early 2003 for installation of new meters capable of AMR and critical-peak TOU pricing. *Id.* at 7. Staff believed the

Company should begin implementing AMR in those areas and for those customers where the benefits to Idaho Power and its customers are the greatest. *Id.*

#### **6. Idaho Power Reply Comments**

The Company's reply comments agreed with the NW Energy Coalition and the LAW Fund that the economic value of load shifting on a hydro-based grid is very modest. Reply Comments at 5. The Company also agreed with their recommendation that further consideration of TOU pricing for Idaho Power's residential customers be deferred until its impacts are better understood. *Id.* at 6.

Idaho Power argued that Staff's comments on the potential benefit of TOU pricing provided an incomplete representation of the results included in the Report. Staff's comments blurred the important distinction between the value associated with load reductions (i.e., the value associated with reductions in power supply costs) with the value associated with customer bill reductions. *Id.* at 2. Idaho Power noted that although customers have the potential for over \$1 million in immediate bill benefits under critical peak TOU pricing, the reduction in power supply costs associated with load shifting is only \$370,000 (Report, p. 23; Report, Table 2, p. 29). *Id.* at 3. The real value of time-of-use pricing comes from a reduction in power supply costs resulting from load shifting, which in turn leads to the reduction in rates paid by all customers – not just the amount of near-term reduced rates passed on to some customers through bill reductions.

The Company further clarified that the critical-peak TOU pricing structure would not eliminate the mismatch between prices and costs associated with standard TOU pricing. *Id.* at 4. While an AMR system allows for more flexibility in obtaining usage information than a manual read system, monthly meter reading and billing schedules will still be necessary in order to generate bills, manage work flows, and integrate usage information into the Company's customer billing system. *Id.*

Although Staff was critical of Idaho Power's assessment of the EEAG's conclusions regarding time-of-use pricing for residential customers, the Company pointed out that its representation of the EEAG's conclusions is consistent with the meeting minutes as reviewed and approved by the individual EEAG members. *Id.* at 4-5.

Even though the Company's Report to the Commission concluded that it is not economically viable to implement time-of-use pricing prior to the implementation of an AMR



system, Idaho Power acknowledged that automated meter reading capability would provide multiple benefits. Idaho Power plans to request 2004 budget approval for the capital necessary to begin AMR implementation in 2004. The Company indicated that it could not implement AMR any earlier because of a very tight capital market and a lack of funding in its 2003 capital budget. Idaho Power believes that the Commission need not take any further action regarding time-of-use pricing at this time and that this docket should be closed. *Id.* at 7.

### **COMMISSION DISCUSSION AND FINDINGS**

Due to extremely low water conditions and large purchased power costs, Idaho Power's residential rates increased approximately 39% over base rates since May 2001. Over the last two years we heard from many frustrated residential customers who did not have the information and demand response options necessary to make informed choices relative to the cost of energy. Because we want to address these concerns and investigate ways to reduce peak load for the benefit of all ratepayers, last year the Commission directed Idaho Power to investigate the viability of residential TOU metering.

This Commission has historically supported investment in conservation and renewable-based resources. Order Nos. 22299, 22758, and 27375. However, the Commission agrees with several of the commentors that TOU is a complement to, and not a substitute for, energy efficiency. The Commission recognized the importance of energy efficiency when it authorized the Energy Efficiency Advisory Group (EEAG) to recommend and prioritize conservation and efficiency programs. Order Nos. 28894 and 29026. Time-of-use pricing, particularly the "critical peak" variety, has the potential to create significant load reductions during high cost hours and reduce the need for expensive peaking facilities. We preliminarily find those two reasons promote the public interest. *Idaho Code* § 61-302. However, we are reluctant to implement TOU pricing at this time without better understanding its collateral impacts. The Commission also agrees with Staff that various TOU rate designs should be tested in sample trials before implementing TOU pricing for all customers. We wish to be clear that our decision not to approve TOU pricing at this time does not preclude its implementation in the future, particularly in light of the generation deficit forecasted by Idaho Power.

To have the option of possibly implementing TOU rate designs in the future, we must install the necessary metering infrastructure today. As explained by several commentors, a variety of meters are available to meet different objectives. However, it is clear that the most

beneficial rate designs (i.e., critical peak TOU) require AMR. AMR allows the meter to be read remotely and thus significantly reduces operational costs – even without instituting TOU pricing programs. Idaho Power’s AMR Report indicated that as compared to the current metering system, an AMR system would have a positive net present value of \$32 million over the life of the equipment. Staff Comments at 2. Based on the data in Idaho Power’s Report, the math seems simple: the \$6 million saved annually in meter reading costs less AMR’s \$4 million annualized costs results in approximately \$2 million of net cost savings. In addition to these savings, we find that AMR would improve meter reading accuracy, eliminate the need for Idaho Power to gain access to customer property for monthly meter reads, and allow Idaho Power to develop new services in the future. An AMR system would improve outage monitoring, theft detection, and employee safety. AMR’s capacity for remote connects and disconnects would also save customer time and employee labor. From a billing perspective, AMR would result in fewer estimated bills, less rebilling, flexible billing schedules, account aggregating, and flexible rate designs. We would also note that Idaho Power is not the only entity to consider the benefits of implementing AMR; Intermountain Gas Company and the City of Homedale are also implementing AMR on their respective natural gas and water systems.

While the Commission is pleased Idaho Power agreed in its reply comments that AMR should be implemented, we do not understand Idaho Power’s decision to delay AMR implementation until 2004. The Company has known of AMR’s substantial benefits since it completed testing an AMR system in the Idaho City area in 1999. We believe that AMR should be implemented as soon as possible, with installation commencing this year and completed in 2004. As a public utility, Idaho Power has the responsibility to keep the rates charged for the services it provides “just and reasonable.” *Idaho Code* § 61-301. This responsibility includes installing infrastructure that reduces operation costs funded by ratepayers. Moreover, the Company has a statutory duty to provide service that “shall be in all respects adequate, efficient, just and reasonable.” *Idaho Code* § 61-302.

The Company indicated that it cannot implement AMR any earlier than 2004 because of a tight capital market and a lack of funding in its 2003 capital budget. Reply Comments at 7. Although we do not doubt this to be true, the Commission does not believe that these obstacles are insurmountable. The Fourth Quarter 2002 Earnings Release Analyst Call indicated that Idaho Power’s earnings have improved significantly and present cash flow is strong due to power

cost recovery. The Company's credit rating is investment grade and there is minimal short-term debt outstanding. The Company's Operation and Maintenance expenses during 2002 were below forecast and are expected to remain so. Given the Company's financial health is improving, we are confident that Idaho Power will find a way to begin implementing AMR this year.

In light of the foregoing discussion, we direct Idaho Power Company to submit a plan no later than March 20, 2003 to replace the current meters of Idaho Power customers with advanced meters. The "advanced meter" contemplated in this plan should be both AMR- and TOU-capable. The plan should set out an implementation timetable that institutes AMR first in areas Idaho Power and its customers will receive the greatest benefits. To address DRAM's concern that the \$72 million cost estimated to implement AMR was too high, this March 20 filing should also include several cost estimates from appropriate advanced meter vendors. Finally, the Commission requests that Idaho Power suggest possible methods to recover the cost of the meters and their installation, along with net expense reductions.

#### **CONCLUSIONS OF LAW**

The Idaho Public Utilities Commission has jurisdiction over Idaho Power Company, an electric utility, and the issues presented in this case pursuant to Title 61 of the Idaho Code, specifically *Idaho Code* §§ 61-302, 61-336, 61-501 and 61-503.

#### **ORDER**

IT IS HEREBY ORDERED that no later than March 20, 2003, Idaho Power Company submit a plan to replace the current meters of Idaho Power customers with advanced meters as described in detail above.

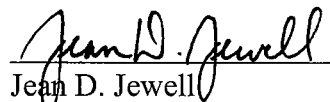
DONE by Order of the Idaho Public Utilities Commission at Boise, Idaho, this 20<sup>th</sup>  
day of February 2003.

  
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PAUL KJELLANDER, PRESIDENT

  
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MARSHA H. SMITH, COMMISSIONER

  
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DENNIS S. HANSEN, COMMISSIONER

ATTEST:

  
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Jean D. Jewell  
Commission Secretary

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